LISTING OF THE CLAIMS

1. An isolated polypeptide, comprising a sequence represented by one of SEQ ID NO:1 through SEQ ID NO:7; SEQ ID NO:9; or SEQ ID NO:14 through SEQ ID NO:17.

2. A pharmaceutical composition, comprising one or more polypeptides of claim 1 and a pharmaceutically acceptable carrier.

3. An immunogenic composition, comprising one or more polypeptides of claim 1 and, optionally, an adjuvant.

4. A vaccine, comprising one or more polypeptides of claim 1 and, optionally, an adjuvant.

5. An isolated polynucleotide comprising:

(a) a sequence represented by one of SEQ ID NO:18 through SEQ ID NO:23 or SEQ ID NO:28 through SEQ ID NO:31;

(b) a sequence which is at least about 90% identical to a sequence of (a);

(c) a sequence which hybridizes under conditions of high stringency to a polynucleotide which comprises a sequence of (a);

(d) a sequence which encodes a polypeptide represented by SEQ ID NO:1 through SEQ ID NO:7; SEQ ID NO:9; or SEQ ID NO:14 through SEQ ID NO:17; or

(e) a complement of any of (a), (b), (c) or (d).

6. A eukaryotic host cell comprising a recombinant construct which comprises a polynucleotide of claim 5, operably linked to an expression control sequence.

7. An antibody specific for the polypeptide of claim 1.

8. The antibody of claim 7, which is a polyclonal antibody.

9. The antibody of claim 7, which is a monoclonal antibody.

10. A kit for detecting the presence of *T. parva* in a sample suspected of containing *T. parva*, or for purifying *T. parva* from a sample containing *T. parva*, comprising an antibody of claim 7.

11. A method for protecting an animal against infection by *T. parva*, comprising administering to the animal a polypeptide of claim 1, under conditions effective for the animal to generate a protective antibody against the polypeptide.

12. A method for protecting an animal against infection by *T. parva*, comprising administering to the animal a polypeptide of claim 1, under conditions effective for the animal to generate *T. parva*-antigen-specific CTLs.

13. A method for protecting an animal against infection by *T. parva*, comprising administering to the animal a host cell of claim 6 under conditions effective for the animal to generate a protective antibody against a polypeptide expressed by the polypeptide.

14. A method for protecting an animal against infection by *T. parva*, comprising administering to the animal a host cell of claim 6, under conditions effective for the animal to generate *T. parva*-antigen-specific CD4+ helper and CD8+ Cytotoxic T lymphocyte responses.

15. A method for detecting a pathogenic protozoan infection in a subject, comprising contacting peripheral blood monocytes from the subject with peptide-antigen pulsed cytotoxic T lymphocytes, wherein the cytotoxic T lymphocytes are obtained from an animal to which has been administered a polypeptide of claim 1, under conditions effective for the animal to generate *T. parva*-antigen-specific CTLs.

16. A method for detecting a pathogenic protozoan infection in a subject, comprising contacting peripheral blood monocytes from the subject with peptide-antigen pulsed cytotoxic T lymphocytes, wherein the T lymphocytes are obtained from an animal to which has been administered a host cell of claim 6, under conditions effective for the animal to generate *T. parva*-antigen-specific CD4+ helper and CD8+ Cytotoxic T lymphocyte responses.

17. A method for detecting *T. parva* in a sample suspected of containing *T. parva*, comprising detecting in the sample a polynucleotide of claim 5.

18. A method for identifying *T. parva* in a sample suspected of containing *T. parva*, comprising contacting the sample with an antibody of claim 7, under conditions effective

for the antibody to bind specifically to its cognate antigen, and detecting the presence of bound antibody.

19. A method for the identification of parasite antigens that are targets of cytotoxic T lymphocytes, comprising co-culturing immortalized fibroblast cell lines transfected with pooled cDNA harvested from a pathogen, with clones of lines of cytotoxic T cells, generated in an animal that has been immunized, by infection and treatment with the pathogen and assaying the supernatant from the co-culture for the presence of a soluble factor.

20. A method for a three-way matrix resolution for identification of a single cDNA clone from a pool of cDNAs, in high throughput procedures, comprising:

(a) preparing a culture of transformed cells by transforming bacterial cells with DNA from a pool of about 25 to about 500 cDNAs, wherein said pool has tested positive in a routine assay;

(b) diluting the culture of transformed cells so as to yield a density of about 500-5000 growth colonies per 150 cm2, when plated on agar-containing plates;

(c) picking about 100 to 500 colonies from the growth cultures;

(d) placing about 5 to 60 pools of about 10-100 individual cultures grown from the colonies, into numbered tubes, in such a manner such that each individual bacterial culture is present in more than one of said pools, so that tubes are labeled with a unique number and positioned so that a matrix of tubes is created so as to accommodate a multi-channel pipetting device;

(e) creating a corresponding matrix table is by arraying the numbers on the corresponding tubes containing the pools into a matrix table;

(f) testing the DNA from each of the tubes in a screening assay; and

identifying the individual positive colony by comparing the results with the matrix array.